

Article

Relying on Technology for Countering Academic Dishonesty: The Impact of Online Tutorial on Students' Perception of Academic Misconduct

Rajka Djokovic¹, Jovana Janinovic², Sanja Pekovic^{2,*}, Dijana Vuckovic³  and Marijana Blecic³¹ Faculty of Law, University of Montenegro, 81000 Podgorica, Montenegro; rajkadj@ucg.ac.me² Faculty of Tourism and Hotel Management, University of Montenegro, 85330 Kotor, Montenegro; jovanav@ucg.ac.me³ Faculty of Philosophy, University of Montenegro, 81400 Niksic, Montenegro; dijanav@ucg.ac.me (D.V.); marijana-b@t-com.me (M.B.)

* Correspondence: psanja@ucg.ac.me

Abstract: Over the last several decades, the issue of academic integrity has emerged as one of the major concerns of higher education institutions throughout the world. Amongst different strategies for combating academic dishonesty, educational interventions in the form of online tutorials are becoming increasingly popular. In this paper, we empirically examine, using a sample of Montenegrin students and the matching method, the relation between online tutorials and four forms of student misconduct, namely cheating, plagiarism, fabrication or falsification, and aiding and abetting academic dishonesty. In addition, we examine whether students that received the certificate after passing an academic integrity test in online tutorial perceived different forms of academic misconduct more seriously than students who participated in the online tutorial but did not receive the certificate. Our results indicate that online tutorial can be useful for enhancing students' awareness of certain types of academic dishonesty (cheating, fabricating/falsifying, and aiding/abetting), while for others (plagiarism), it remains ineffective. Similarly, we found that getting a certificate after completing tutorial did not amplify students' attitudes towards certain dishonest behaviors (cheating or fabrication/falsification), but it enhanced students' perceived seriousness of plagiarism and aiding/abetting dishonesty. The result of this analysis may have important implications for university managers and policy makers when designing strategies for combating particular types of dishonesty in academia.

Keywords: academic integrity; online tutorials; certificate; empirical analysis; matching method

Citation: Djokovic, R.; Janinovic, J.; Pekovic, S.; Vuckovic, D.; Blecic, M. Relying on Technology for Countering Academic Dishonesty: The Impact of Online Tutorial on Students' Perception of Academic Misconduct. *Sustainability* **2022**, *14*, 1756. <https://doi.org/10.3390/su14031756>

Academic Editor: Dina Zoe Belluigi

Received: 15 December 2021

Accepted: 28 January 2022

Published: 3 February 2022

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

Technologic advances have significantly transformed all segments of the contemporary society, including the higher education landscape. The use of Internet and digital tools challenged the basic organization of both teaching and evaluation practices, changing the ways in which lectures are organized and in which students' knowledge and skills are assessed [1]. Undoubtedly, ICT (information and communication technology) opened new possibilities for studying, but, unfortunately, also for cheating [2]. The COVID-19 pandemic has further exacerbated the use of Internet and technology in higher education, as most educational institutions were propelled to switch to online learning and evaluation forms, facilitating students' unethical behavior [3,4]. Consequently, academic misconduct has been increasingly recognized as one of the major concerns in higher education [5], tarnishing the reputation of academic institutions, and propelling universities around the world to adopt different strategies for fighting non-ethical behavior.

In order to better understand the increasingly concerning issue of academic dishonesty, scholars extensively examined the reasons for which students engage in academic malpractices. Surprisingly, a number of studies demonstrated that students often cheat

unintentionally, as they lack basic academic skills and understanding of what academic integrity is and which behaviors are considered unethical (e.g., [6,7]). A recent study by Anohina-Naumeca, Birzniece, and Odiņeca [8] revealed low levels of awareness of universities' academic integrity policies amongst Latvian students, while MacDonald and Carroll [9] indicated that in order to combat academic dishonesty, institutions should focus on giving students information on strategies to avoid academic integrity violations. Indeed, as lack of understanding about academic integrity appears to be one of the main reasons for students' cheating [7] and plagiarism [10], educating students on these topics should deter them from behaving in a non-ethical manner [11]. Educational interventions with preventive character are considered to have a positive impact on students' attitudes towards academic integrity [12], increasing students' perceived understanding of academic integrity [13] and perceived seriousness of academic dishonesty [14]. Studies have consistently supported this assumption. Levine and Pazdernik [2] indicated that students exposed to more information related to plagiarism engaged less in it, advocating that teaching students about plagiarism could be considered as a method for decreasing this type of misconduct.

Online learning tutorials have increasingly become an important tool for educating students about academic integrity [13]. Moreover, due to their simplicity, accessibility, and flexibility, online learning tutorials emerge as a widespread mechanism for preventing academic misconduct [13]. A number of studies, starting with the work of Smith, Dupre, and Mackey [15], confirmed that online courses reduce cheating by eliminating social barriers and boosting communication. However, other educational studies analyzed possible effects of using online tutorials on students' knowledge about academic integrity, questioning their effectiveness. In this vein, Risquez, O'Dwyer, and Ledwith [16] suggested that online academic integrity tutorials are not useful in preventing students from committing plagiarism, rather, those tutorials help students to recognize plagiarism in real practice. Grebing [17] argued that online academic integrity module did not have effect on the students' overall perception of cheating, but for some forms of cheating this effect was significant. Scholarly literature thus provides contradictory and inconclusive results when it comes to the effect of online academic integrity tutorials on students' perception of academic misconduct (mainly focusing on plagiarism), which is why we aim to contribute to this debate. Distinguishing between various categories of academic dishonesty, namely cheating, plagiarism, falsifying/fabricating, and aiding/abetting academic dishonesty, we seek to provide the answer for the systematically divergent empirical findings in literature and precisely for which forms of academic misconduct the use of online tutorials can actually make a difference in students' perception and general academic integrity culture.

The additional question that arises from the use of online tutorials in preventing academic misconduct is related to the motivation of students to engage in online learning. In the context of academic integrity, Bingham, Reid, and Ivanovic [18] underlined that considering that academic integrity is seen as a 'dry subject', it is quite difficult to stimulate students' participation, engagement, and learning, which could deter the effectiveness of learning process. While in traditional courses the main incentive for students is to pass the exam and obtain a good grade, different motivators support the learning process in online modules [19]. Thus, a number of scholars explored ways of increasing intrinsic motivation for students in online courses [19] and different strategies which may be employed in online learning environments [20]. In most of the scholarly work, researchers emphasized the importance of having interesting content, an engaging lecturer, consistent communication [19], and promoting interaction [20] for motivating e-learners and increasing their participation and success. However, very few studies addressed the importance of certification as a tool for motivating students' learning and engagement in online tutorials. Borrás Gené, Martínez-Nuñez, and Fidalgo-Blanco [21] explored tools to increase students' motivation in massive online open courses and found that certificates and badges acted as an important incentive to finish the course. Accordingly, Haug and colleagues [22] revealed that students who aimed to obtain certificates of attendance and badges demonstrated higher investment in learning and interaction. However, to our knowledge, none of the scholarly work from

the field analyzed the role of certificates in increasing students' engagement and success in online academic integrity tutorials and their relationship with academic misconduct. Thus, we aim to address this gap through our research.

Two main research questions guide our study. First, we interrogate whether, after completing the online academic integrity tutorial, students perceive the four main forms of academic misconduct (cheating, plagiarism, falsifying/fabricating, and aiding/abetting) differently. We aim to understand if an online academic tutorial will make students perceive each of these four academic dishonesty forms as a more serious offense. This is important as students may not consider each of these academic integrity breaches to be equally problematic, which is why academic integrity tutorials should enhance their awareness and understanding of cheating, plagiarism, falsifying/fabricating, and aiding/abetting. The second research question refers to whether receiving a certificate after completing the online integrity tutorial further amplifies the learning process, making students who receive the certificate perceive academic dishonesty more seriously compared to those who only completed the tutorial without receiving a certificate. By analyzing such a relation, the paper aims to shed light on whether certification might act as an incentive for strengthening the academic integrity culture and effectiveness of online integrity tutorials. Overall, the main objective of the study is to analyze the capacity of online tutorials to impact students' perception of academic dishonesty and consequently their potential to act as a deterrent to unethical behavior. In line with that, we suggest the general hypothesis that completing online tutorial enhances students' awareness and understanding of the four main forms of academic misconduct. The second large objective of the study is to question if certificates can be a useful tool for strengthening the impact of online tutorials on students' ethical behavior.

This study contributes to the emerging literature on academic integrity in three main ways. Firstly, we interrogate the impact of online academic integrity tutorial on perceived seriousness of four types of academic misconduct: cheating, plagiarism, falsifying/fabricating, and aiding/abetting academic dishonesty, offering novel insights into the subject. Actually, as contended by Benson and colleagues [23], the literature on the impact of academic integrity tutorials does not cover all areas of academic integrity, focusing mainly on the role of educational interventions in combating plagiarism. Therefore, using different dimensions of academic integrity, this paper extends prior research by considering that the impact of online academic integrity tutorial may be dependent on the type of academic integrity examined. Second, we analyze if and how these relations are influenced by certification, i.e., whether students that received the certificate after passing the academic integrity test perceived academic misconduct more seriously than students that participated in the online tutorial but did not receive the certificate, which has not been previously examined in literature, to our knowledge. Thirdly, employing a representative sample of 592 students from the University of Montenegro, we offer an important insight into academic integrity culture in developing countries, benchmarking our results against previous analyses and their impact in highly developed academic environments.

In the remainder of the paper, we briefly review the available literature related to the online academic integrity tutorials and academic dishonesty. We then describe our empirical methodology followed by presentation of the research findings. We conclude with a discussion of the obtained results and suggest some policy implications.

2. Literature Review

2.1. Dealing with Academic Dishonesty through Online Tutorials

Online tutorials are considered to be a pedagogical instrument which relies on transferring knowledge through ICT tools [24]. An important feature of online tutorials is their availability in every moment, which gives students more flexibility in choosing when to engage in the learning process [25]. Although Price, Richardson, and Jelfs [26] argued that students who received online tutorial support reported poorer experiences of tuition, several arguments contradict this pessimistic view. In fact, it is believed that online tutorials

tend to increase educational effectiveness by broadening the access to learning resources, creating a more engaging learning environment, personalizing and individualizing teaching and knowledge transfers, and optimizing time management [27]. Furthermore, scholars argue that online tutorials are a cost-efficient educational method as they reduce both personnel and facility costs [27]. Moreover, recent global challenges, such as the COVID-19 pandemic, have demonstrated the utility and necessity of using online tutorials as a major pedagogical resource of the 21st century [28].

In the context of academic integrity, Myers [29] suggested that tutorials on academic integrity impact students' attitudes, both by improving the knowledge component of their attitudes and through the modeling established by academic staff's focus on academic integrity. Few scholars have empirically studied the role of online tutorials in reducing academic dishonesty amongst university students [8,30–32]. In a comprehensive study, Stoesz and Yuditseva [13] screened over 1000 peer-reviewed publications seeking to analyze the effectiveness of different types of educational interventions (face-to-face workshops, e-tutorials, blended learning) in reducing academic misconduct. Their meta-analysis confirmed that educational interventions of all kinds, including online tutorials, can significantly change attitudes, skills, and competences related to the academic integrity, increasing students' perceived understanding of academic integrity policies. This approach builds on the argument that academic misconduct is deeply rooted in students' lack of knowledge, awareness, and skills related to the main principles of academic integrity and general confusion about what constitutes plagiarism and which behaviors are considered cheating [33]. Lowe and colleagues [34] explained how faculty at a large research university developed a stand-alone online academic integrity course for first-year and transfer students using scenarios of six different types of misconduct. Their findings indicated that the course helped students in recognizing and avoiding academic misconduct. Similarly, exploring the role of academic integrity online tutorial at the MacEwan University, Curtis and colleagues [33] found that academic integrity online modules increase students' understanding of plagiarism and the perception of plagiarism as a serious issue. Influential studies by Belter and Du Pre [30] and Dee and Jacob [31] both confirmed that the academic integrity modules reduce the incidence of plagiarism.

However, as previously mentioned, some scholars reported that pedagogical tools such as academic integrity training courses did not significantly change the likelihood of students' cheating. This is consistent with the results of Ellery [35] who found that even after a tutorial on plagiarism, 25% of students continued plagiarizing. Furthermore, while courses can enhance students' understanding of academic integrity concepts, these changes are not sustained over time [36]. The empirical findings of Risquez, O'Dwyer, and Ledwith [16] also indicated that online tutorial did not influence students' perception of plagiarism nor lowered their engagement in plagiarism. A recent study by Stephens and colleagues [37] suggested that the impact of online academic integrity tutorials on changing students' perception and behavior towards academic dishonesty is rather limited, concluding that such courses can be useful only in addition to other integrity initiatives and activities. Similarly, Benson and colleagues [23] argue that academic integrity e-learning tutorial is not a universal and comprehensive solution to the academic integrity problem, which is why they should be complemented with additional approaches and strategies for combating academic dishonesty. These inconsistent results create a fertile ground for further exploration of the role of online tutorials and their impact on academic integrity development in different academic settings.

Taking into consideration the contradicting conclusions regarding this type of educational intervention for spreading the culture of integrity, one may expect that a number of scholars have already extensively dealt with the impact of tutorials on students' perception and understanding of academic dishonesty, including at least its four major components. However, to our knowledge, most of the studies investigated only the impact of online tutorials on plagiarism (e.g., [26,30,33]) without focusing on other major forms of academic misconduct. Therefore, we will focus on investigating if the effectiveness of online tutorial

depends on the type of academic dishonesty, which is missing from the previous literature. In other words, we aim to understand if online tutorial can help in combating four types of academic dishonesty, namely cheating, plagiarism, fabrication/falsification, and aiding/abetting academic dishonesty.

While our analysis aims to seek an explanation for the contradicting results in literature, we adopt the dominant argument that academic tutorials play an important role by fostering a positive culture of integrity [30]. Thus, we formally hypothesize:

Hypothesis 1 (H1): *Completion of online academic integrity tutorial increases students' perceived seriousness of academic dishonesty.*

2.2. The Role of Certification in Fostering Academic Integrity Learning

Notably, it is considered that the effectiveness of online tutorials is contingent upon various factors. For instance, exploring development and implementation of the academic integrity online tutorial at the MacEwan University in Canada, Benson and colleagues [23] noted that impact and helpfulness of the tutorial largely depends on its design and compatibility with institutional academic integrity policies. Furthermore, the impact of these kinds of educational interventions on the incidence of academic dishonesty is conditional on whether the tutorial is obligatory or voluntary [38]. Examining 25 publicly accessible online tutorials for plagiarism prevention, Germek [39] highlighted that factors such as length, quality of quiz questions, and clarity of learning objectives influence their impact effectiveness. In the same line, Dubey and Piroška [40] considered another important aspect of online tutorials, related to the students' motivation, which affects learners' engagement and performance.

One of the motivating factors often studied in literature on online learning is the certification and acquisition of digital badges. Accordingly, in the study by Borrás Gené, Martínez-Nuñez, and Fidalgo-Blanco [21], when asked whether they were motivated by getting the certificate after the completion of the course, 75% of students answered positively, confirming that certificates represent an important incentive for completing the course and reducing dropout rates. Certificates are believed to be efficient in ensuring the ongoing participation of e-learners and the intention to earn a certificate is seen as predictive of students' engagement in the course content and course completion. In the study by Kizilcec and Schneider [41], approximately half of the respondents reported the intention to earn a certificate and those who did so were indeed more likely to actively engage in the discussion forum.

In contrast, Milligan and Littlejohn [42] found that a much smaller fraction of participants (1.66%) in online courses was primarily motivated by certification, citing the learning content as the major source of motivation. Furthermore, the intention to earn a certificate does not guarantee the actual certificate award [41]. Thus, it remains unclear whether certification increases motivation, engagement, and knowledge retention in online courses which could be reflected in the effectiveness of online tutorials in combating academic dishonesty. In order to address this issue, we analyze correlation between the acquisition of the certificate and perceived seriousness of dishonest behaviors. Namely, we interrogate if students who earned a certificate were more likely to perceive cheating, plagiarism, falsification/fabrication, and aiding/abating as serious issues than their peers who completed the tutorial without obtaining a certificate. Despite the lack of agreement on the effect of certification on online learning process and its absence from literature on academic integrity, we hypothesize that certification positively impacts students' understanding of academic dishonesty. Thus, we suggest following hypothesis:

Hypothesis 2 (H2): *Receiving a certificate after passing an academic integrity test in online tutorial amplifies students' perceived seriousness of academic dishonesty compared to students who did not receive it.*

The proposed hypotheses are illustrated in Figure 1.



Figure 1. Research model.

3. Empirical Strategy

3.1. Data

To investigate these two hypotheses, we conducted a survey dedicated to the issue of academic integrity. The questionnaire was inspired by previous scholars that examined the academic integrity issue (e.g., [5,28,43]) and may be found in the Supplementary Materials (Academic Integrity Questionnaire). The survey was structured thematically around emerging themes related to the academic integrity such as students' perception of their academic skills, academic work environment, promotion of academic integrity, institutional academic integrity policies, academic dishonesty, motivations for academic dishonesty, workplace integrity, etc.

A quantitative survey was conducted between December 2019 and March 2020 at the University of Montenegro. The sampling followed procedure with the aim of collecting a representative sample of students regarding gender, age, level of education, and a representative sample of student population including all 19 faculty units. In fact, the survey was purposely administered to all students present in the classroom, in order to assure participation of students with different socio-demographic characteristics, GPAs, and different previous knowledge of academic integrity issues. The final sample included 592 students with all necessary information relevant for this study. In the sample, 34% of the students were men and 66% were women; they varied in age from 19 years to 48 years. Regarding study level, 27% of students were 1st year undergraduate; 21% were 2nd year undergraduate; 31% were 3rd year undergraduate; 14% were 4th year undergraduate; 5% of were master level; and 1% were PhD level.

3.2. Measure

As indicated previously, we use four indicators of academic dishonesty as dependent variables. They are defined in accordance with various items advocated and adapted from Alleyne and Phillips [44]. All measurements were presented using a 5-point Likert-type scale indicating how seriously students perceive academic misconduct where 1 = not at all and 5 = serious.

Perceived seriousness of cheating. Our dependent variable entitled CHEATING is defined using the following seventeen items: (1) Copying on test from other without their knowledge; (2) copying on test from another with their knowledge; (3) using unpermitted crib notes (cheat notes) during a test; (4) turning in a paper obtained in large part from a term paper "mill" or website that did not charge this information; (5) fabricating/falsifying a bibliography; (6) altering a graded test and submitting it for additional credit; (7) turning in work done by someone else; (8) using a calculator on an exam when instructed not to; (9) using a textbook during an exam when instructed not to; (10) getting a copy of the questions for an exam ahead of time; (11) getting a copy of the answers for an exam ahead of time; (12) having a friend pretend to be me to take an exam; (13) giving a fake excuse

for missing an exam; (14) buying a paper online to submit; (15) submitting the same paper for two classes; (16) listing sources in a bibliography after only reading the abstract of an article; (17) listing sources in a bibliography that were not actually read.

Perceived seriousness of plagiarism. We measured variable PLAGIARISM using the six following items: (1) copying a few sentences from written source without citing; (2) copying material word-for-word from a written source; (3) copying a few sentences of material from an Internet source without acknowledging them in the paper; (4) copying directly from a source (word-for-word) without citing; (5) turning in a paper copied from another student; (6) summarizing from a source without citing.

Perceived seriousness of falsifying/fabricating. To measure variable FALSIFYING/FABRICATING, two items were used: (1) falsifying/fabricating research data; (2) falsifying/fabricating lab data.

Perceived seriousness of aiding/abetting academic dishonesty. We constructed the variable referring to AIDING/ABBETTING ACADEMIC DISHONESTY using the following six items: (1) writing or providing a paper for another student; (2) helping someone else cheat on a test; (3) impersonating a friend in order to take an exam for him/her; (4) writing a paper for someone else to submit; (5) selling a self-written paper to another student for submission; (6) providing a graded assignment for another student to submit.

Measurement of model validity. In order to check the accuracy of our dependent variables, we performed convergent validity, discriminant validity, and composite reliability. We used the average variance extracted (AVE). AVE that exceeded the threshold of 0.5 indicates good convergent validity [45]. As seen from the Table 1, the obtained findings indicated that both convergent validity and discriminant validity are not an issue. Raykov's factor reliability coefficient and Cronbach's alpha, shown in Table 2, are employed to check the composite reliability. Table 2 summarizes our findings which demonstrated that the obtained values exceeded the recommended value of 0.7 [46].

Table 1. Average variance extracted (AVE) by latent variables.

Variable	AVE	Measurement of Model Validity
CHEATING	0.56	No problem with discriminant validity No problem with convergent validity
PLAGIRISM	0.62	No problem with discriminant validity No problem with convergent validity
FALSIFYING/FABRICATING	0.81	No problem with discriminant validity No problem with convergent validity
AIDING/ABBETTING ACADEMIC DISHONESTY	0.60	No problem with discriminant validity No problem with convergent validity

Note: when AVE values \geq SC values, there is no problem with discriminant validity when AVE values \geq 0.5, there is no problem with convergent validity.

Table 2. Raykov's factor reliability coefficient and Cronbach's alpha.

Variable	Raykov's Factor Reliability Coefficient	Cronbach's Alpha
CHEATING	0.96	0.96
PLAGIRISM	0.90	0.90
FALSIFYING/FABRICATING	0.89	0.88
AIDING/ABBETTING ACADEMIC DISHONESTY	0.90	0.90

Online tutorial. We evaluated variable ONLINE TUTORIAL as a binary variable that equals 1 if the student completed online academic integrity tutorial, otherwise it equals 0. The online tutorial (<http://www.akademskiintegritet.ucg.ac.me/>, accessed on 1 December 2020) offered at the University of Montenegro is divided in two major parts, where the

first one, Academic integrity 1 consists of 4 lessons, which in written and audio-visual form (through videos) explain the basics of academic integrity, different types of academic integrity violation, sanctions, and procedure for punishing academic dishonesty, as well as the advice on how to avoid academic integrity breaches. The second part of the tutorial, Academic integrity 2, aims to explain principles of academic writing in order to enhance students' competence to avoid plagiarism. It is divided into five lessons, which explain the main characteristics and purpose of academic writing, rules for quoting and referencing styles, possible violations of academic integrity related to academic writing, a specific form of academic integrity for the art students, and finally advice for students in terms of good academic writing practice. After each course, students can access the test on the associated issue. The results of the test are automatically generated, so the students can identify their eventual mistakes. Students could repeat tests until they achieved 100% accuracy.

Certification. We assessed the variable CERTIFICATION as a binary variable indicating if the student received a certificate after passing the test successfully, i.e., they have to provide all correct answers.

We also controlled for well-recognized variables that can explain students' attitude towards academic misbehavior. Specifically, in accordance with previous scholars (e.g., [43,47]), we controlled for our students' socio-demographic characteristics such as: (1) GENDER; (2) AGE; (3) LEVEL OF EDUCATION; (4) CUMULATIVE GRADE POINT AVERAGE; (5) REPEATED ACADEMIC YEAR; (6) ERASMUS MOBILITY EXPERIENCE; and (7) INFORMATION ABOUT ACADEMIC INTEGRITY. In addition, we introduced six further variables in accordance with [48,49] related to students' participation in the following: (1) PAID EMPLOYMENT; (2) STUDENTS CLUBS AND ORGANIZATIONS; (3) SPORTS CLUBS; (4) ACADEMIC CLUB OR GROUP; (5) STUDENT PARLIAMENT; and (6) OTHER CLUB OR ORGANIZATION.

In Table 3, we present the descriptive statistics of variables used.

As it can be observed in Table 3, regarding our four types of academic misconduct, the higher the score (Max), the more students perceive each of these four academic dishonesty forms as a more serious offense. For instance, when looking at variable representing cheating, the findings indicate that the mean of cheating seriousness is 47.34 (out of a maximum of 68). Furthermore, variables of paid employment, student clubs and organizations, sports club, academic club or group, student parliament, other club or organization indicate if the students participated and if so, how long per week in those activities. The variables have the following four categories: (1) not at all; (2) 1–9 h; (3) 10–19 h; (4) more than 19 h. Therefore, for instance, 50% of students in our sample ranged between the second and third category when looking at the variable representing paid employment.

3.3. Empirical Model

Considering the nature of our dependent variables, we first employed a Tobit regression model using STATA software, serial number 401406282679. A Tobit regression model is an econometric approach considered as censored [50]. The model can be written as $Y_i^* = X_i'\beta + \varepsilon_i$, where X_i denotes the vector of the students' characteristics; β is the coefficient's vector of independent variables, and ε_i represents the unobserved error term. The observed variable Y_i corresponding to different forms of academic dishonesty can be written as: $Y_i = Y_i^*$ if $Y_i^* > 0$; $Y_i = 0$ if $Y_i^* \leq 0$, where Y_i^* is an unobserved latent variable.

However, since results obtained using the Tobit model do not take into the account the selection effects, it may be the case that the obtained results would be biased. In fact, examining the effect of online tutorial on students' academic misbehavior may not be random since it can depend on students' characteristics. Accordingly, employing simple regression analysis may produce biased results. In order to correct for potential bias, we also employed matching estimators [51] using STATA software.

We consider students that used online tutorial as individuals that received a 'treatment' and define it as T ($T = 1$ if the individual is treated, $T = 0$ if not). The usefulness of the treatment is evaluated through the result y_i . Hence, each student has two possible outcomes:

y_0 (if $T = 0$) and y_1 (if $T = 1$). y_0 and y_1 are never detected at the same time, as a student received the treatment or not. More precisely, only the actual behavior of student, noted Y , is perceived: $Y = y_1T + y_0(1 - T)$.

Matching techniques tend to correct for selection bias by pairing students that used online tutorial with students that did not use online tutorial that have similar observed characteristics. In this sense, the paired students that did not use online tutorial are the counterfactuals for students that used online tutorial, so we can attribute the difference of outcome between them to the treatment effect.

Notably, the second set of our hypotheses were also tested using the matching method. More precisely, our sample consisted only of students that used online tutorials. In this context, certification award is considered as a ‘treatment’.

Table 3. Descriptive statistics of variables used ($N = 592$).

Variables	Mean	SD	Min	Max
CHEATING	37.34	13.83	17	68
PLAGIRISM	16.56	5.18	6	24
FALSIFYING/FABRICATING	5.84	2.04	2	8
AIDING/ABBETING ACADEMIC	17.05	5.23	6	24
DISHONESTY				
ONLINE TUTORIAL	0.29	0.45	0	1
CERTIFICATION	0.25	0.43	0	1
GENDER	0.66	0.47	0	1
AGE	21.71	2.96	19	48
1ST YEAR UNDERGRADUATE	0.27	0.44	0	1
2ND YEAR UNDERGRADUATE	0.21	0.41	0	1
3RD YEAR UNDERGRADUATE	0.31	0.46	0	1
4TH YEAR UNDERGRADUATE	0.15	0.35	0	1
MASTER LEVEL	0.05	0.22	0	1
PhD LEVEL	0.01	0.09	0	1
CULMULATIVE GRADE POINT				
AVERAGE—A	0.14	0.34	0	1
CULMULATIVE GRADE POINT				
AVERAGE—B	0.22	0.41	0	1
CULMULATIVE GRADE POINT				
AVERAGE—C	0.30	0.45	0	1
CULMULATIVE GRADE POINT				
AVERAGE—D	0.25	0.43	0	1
CULMULATIVE GRADE POINT				
AVERAGE—E	0.09	0.28	0	1
REPEATED A YEAR	0.27	0.44	0	1
ERASMUS MOBILITY	0.11	0.31	0	1
PAID EMPLOYMENT	1.55	0.96	1	4
STUDENT CLUBS AND ORGANIZATIONS	1.40	0.70	1	4
SPORTS CLUB	1.71	0.82	1	4
ACADEMIC CLUB OR GROUP	1.27	0.67	1	4
STUDENT PARLAMENT	1.22	0.60	1	4
OTHER CLUB OR ORGANIZATION	1.43	0.77	1	4
INFORMED ABOUT ACADEMIC				
INTEGRITY	0.64	0.48	0	1

4. Results

We will first introduce the matching results and then compare these results with the results obtained by the Tobit model, revealing some selection effects.

Table 4 presents the results of the matching analyses associated to the first hypothesis. We observed the relation between online tutorial and perceived seriousness of four major forms of academic dishonesty. Table 4 presents results for each of these types of misconduct.

Table 4. The effect of online tutorial on the perceived seriousness of academic misconduct. ($N = 592$).

Academic Misconduct	Observed Coefficient	Standard Error	Z-Value
Cheating	3.68 *	1.93	1.90
Plagiarism	1.01	0.75	0.18
Falsifying/fabricating	0.66 ***	0.27	2.39
Aiding/abetting academic dishonesty	1.47 **	0.70	2.08

Observed coefficient—mathematical relationship between dependent and independent variables. The standard error (SE) represents the approximate standard deviation of a sample used. Z-value is the number of standard deviation units away from the mean. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

Hypothesis 1 predicts a positive relationship between online tutorial and students' perceived seriousness of academic dishonesty. This hypothesis is partially supported, as online tutorials indeed positively and significantly influenced students' perceived seriousness of cheating, falsifying/fabricating, and aiding/abetting academic dishonesty. As shown in Table 4, online tutorial positively influences students' perceived seriousness of cheating ($b = 3.68$, $p < 0.10$), which is consistent with previous literature [52,53] arguing that educational programs play an important role in combating academic misconduct by changing students' attitudes and behaviors towards cheating. Similarly, as shown in Table 4, online tutorials are also effective in increasing students' awareness of the seriousness of falsifying/fabricating ($b = 0.66$, $p < 0.01$). The findings presented in Table 4 suggest that online tutorial is positively and significantly associated with students' perception of seriousness regarding aiding/abetting academic dishonesty ($b = 1.47$, $p < 0.05$). Accordingly, our empirical results provide support for the anecdotal evidence that when presented with clear and straightforward information on certain behaviors which constitute academic integrity violation, students are more likely to perceive such misconduct as a serious offence [6]. Consequently, our results are consistent with those of [17], who suggested that for certain forms of misconduct, completion of the online tutorial had significant effects on students' perception, especially when it comes to ambiguous academic integrity issues where students often receive confusing and contradictory information.

Nonetheless, our hypothesis is only partially confirmed since we also found that online tutorial does not have any influence on students' perceived seriousness of plagiarism. These findings contradict the results of Belter and Du Pre [30], Obeid and Hill [32], and Curtis and colleagues [33], which suggested that students who completed online academic integrity module perceived plagiarism to be a more serious issue than students who did not. However, our findings are consistent with those of Ballard [54] who found that academic integrity modules did not have a significant effect on the students' plagiarism rate (measured by similarity index scores of students who completed the module and those who did not). Though speculative, an explanation for this finding is that plagiarism is a rather complex issue which requires a more comprehensive approach and more consistent efforts. In fact, one-way educational intervention which simply informs students about what plagiarism is may not be enough to empower them to put this knowledge into practice and grasp the seriousness of the offense [55]. According to this view, more practical exercises related to plagiarism are needed [56], and plagiarism prevention should include multiple strategies, including the use of text-matching software [47], individual presentation techniques, and individual coursework [57,58].

Turning to the differences between students that obtained certificates for academic integrity versus students that did the tutorial but did not obtain the certificate, we present the following results.

Similarly as for Hypothesis 1, we explored Hypothesis 2 by analyzing the moderating effect of certification on correlation between online tutorial completion and perceived seriousness of each of the four types of academic dishonesty. As shown in Table 5, a non-significant difference was found between students that used online tutorial and obtained a certificate and those that used the online tutorial but did not obtain a certificate regarding

their perceived seriousness of cheating ($b = 4.40$, ns) and falsifying/fabricating ($b = 0.64$, ns). These results suggest that getting a certificate did not amplify students' attitudes towards cheating and falsifying/fabricating—only the completion of tutorial matters. This may be explained by the fact that students did not need the certificate in order to get motivated and engage in learning on these topics and thus certification did not bring significant improvement of their perceived seriousness of cheating. Thus, for these two types of dishonesty, Hypothesis 2 would be rejected.

Table 5. The effect of online tutorial on the perceived seriousness of academic misconduct: Certificate awarded vs. no certificate awarded ($N = 172$).

Academic Misconduct	Observed Coefficient	Standard Error	Z-Value
Cheating	4.40	3.16	1.39
Plagiarism	2.23 *	1.20	1.86
Falsifying/fabricating	0.64	0.48	1.34
Aiding/abetting academic dishonesty	2.22 *	1.18	1.87

* $p < 0.1$.

Yet, our results also indicated that there is a significant difference between students that used online tutorial and obtained a certificate and those that used online tutorial but did not obtain a certificate regarding perceived seriousness of plagiarism ($b = 2.23$, $p < 0.10$) and aiding/abetting academic dishonesty ($b = 2.22$, $p < 0.10$), as shown in Table 5. These findings provide support for the notion that external incentives such as a diploma or certificate award may drive students' higher performance in a specific learning context [59]. Furthermore, it is considered that the extrinsic rewards further boost the intrinsic motivation (e.g., [60]) which is expected to substantially improve students' performance. In addition, this might also be due to the fact that in order to receive a certificate, students needed to complete all exercises aimed at testing knowledge, which is considered to significantly enhance active learning and knowledge retention [61]. Consequently, Hypothesis 2 is partially accepted, as for particular types of academic dishonesty (plagiarism and aiding/abetting dishonesty), students who were awarded a certificate after completing online tutorial showed greater awareness of the seriousness of such academic misconduct.

Finally, a comparison of the results from the Tobit model with the matching ones provided empirical evidence of some selection effects. In general, the findings obtained from Tobit model are somewhat different from those obtained from the matching results, especially when looking at the effect of online tutorial on the perceived seriousness of cheating (the results obtained from the Tobit model are available upon request from the authors). More precisely, the evidence from the Tobit model indicates that online tutorial does not influence student's perceived seriousness of cheating. In addition, the coefficients obtained from the two models are quite different.

5. Discussion

Hughes and McCabe [62] explained cheating in reference to the growing confusion about what cheating actually represents, as students sometimes cheat unintentionally, without realizing they are committing a fraud. Thus, academic integrity literature recently focused on educational interventions, and more precisely online academic integrity tutorials as a tool for enhancing culture of academic integrity and reducing cheating behaviors [23,63].

In the paper, we aimed to address the effectiveness of online academic tutorials on academic dishonesty, by analyzing how completing online tutorial impacts students' perception of four major categories of dishonesty, i.e., cheating, plagiarism, fabricating/falsifying, and aiding/abetting academic dishonesty. Our findings indicated that educational intervention may be effective in spreading the culture of academic integrity, since the obtained

findings show that students who completed online tutorial perceived academic misconduct such as cheating, fabricating/falsifying and aiding/abetting academic dishonesty more seriously. However, we found no significant difference between students who used online tutorial and those who did not concerning the perceived seriousness of plagiarism, which may be indicative of the necessity for the adoption of a more holistic approach in dealing with the complex issue of plagiarism. This surprising result could be explained by the fact that, as plagiarism presents a rather complex issue, online tutorials can help students to identify plagiarized work but not to change their thinking about it [16]. Namely, tutorials should only be used as part of a more comprehensive strategy which should also include other tools such as plagiarism-detection software [2,47], honor codes [64], disciplinary measures and punishment [65], and teacher training [66].

In terms of whether there is a difference between students who received a certificate after successfully passing online tutorial on academic integrity and those who did not in terms of perceived seriousness of academic misconduct, our findings indicated that there were certain differences in how students perceived plagiarism and aiding/abetting academic dishonesty. These results might be due to the fact that exercises which students are required to complete in order to acquire a certificate enhance, clarify, and strengthen their understanding of these topics, contributing thus to better knowledge retention.

5.1. Policy Implications

Having in mind the importance of strengthening academic integrity for enhancing overall quality and reliability of higher education, the results of this study might be useful for university managers and policy makers when designing strategies for combating dishonesty in academia. Our findings indicated that HEIs should design educational interventions such as online tutorials which would enable students to better understand behaviors and offences which constitute academic misconduct. Furthermore, our study sheds light on the fact that while online tutorials might be especially effective in increasing students' perception of seriousness of offences such as cheating, fabrication/facilitation and aiding/abetting academic dishonesty, other types of misconduct such as plagiarism require additional institutional intervention. Consequently, universities might selectively decide on whether online tutorial is the most appropriate tool for targeting the particular form of dishonesty they plan to address. Finally, HE stakeholders can also infer conclusions regarding the usefulness of certification for stimulating the learning process and enhancing students' retention of academic integrity principles and seriousness of academic dishonest behaviors.

Notably, while our findings underline the role of online academic integrity tutorial for students' perception of each of the academic dishonesty components, they also provide a strong support for introducing additional pedagogical interventions for fighting non-ethical behaviors. In fact, all relevant actors in the HE should recognize that online tutorials cannot be understood as a comprehensive solution to the problem and it is necessary to combine them with additional mechanisms, including curriculum development, honor codes, peer mentoring, promotion of ethical norms, use of the plagiarism-detection software, and disciplinary actions. It is also important to underline that the content of online tutorials needs to be updated regularly in order to follow the trends in HE.

5.2. Limitations

Our study, however, is not without limitations. First, data collected only reflect students' perceived seriousness of academic dishonest behaviors after using the online tutorial, and not their actual knowledge and comprehension of the specific topic in the aftermath of educational intervention. Furthermore, it does not answer whether the increased perceived seriousness acts as a preventing mechanism which would deter students from committing academic misconduct. Thus, subsequent studies in the field might aim to test students' willingness to misbehave before and after completing a tutorial, in order to measure its direct impact. Second, our study only considered the short-term effect of online tutorial, without

taking into consideration other possible influences (honor codes, disciplinary measures, etc.) and the long-term impact of educational interventions. It would thus be useful to replicate the research by gathering periodical information on how perception, self-reported behavior, and incidence of dishonest behavior changes over time, as students complement the information obtained through tutorial and start putting them in practice. Third, the effectiveness of an online tutorial on academic dishonesty might also depend on the design and overall quality of the tutorial itself. Consequently, it may be interesting to consider to which extent applying innovative teaching strategies such as project-based learning [67], augmented reality [68], or gamification [69] might improve the effectiveness of online tutorials on the culture of integrity. Fourth, scholars interested in the topic might also be drawn to explore the COVID-19-inspired techniques such as online proctoring of student examinations, which has been found reduce the prevalence of academic dishonesty [70–72] and perhaps investigate whether proctoring might moderate the relationship between online tutorials and students' awareness of academic misconduct. Finally, each culture has different ethical standards and considerations, which is why our results shall not be generalized for the entire student population. In fact, perceptions of academic integrity probably vary across cultures [73] and different academic settings suggest different frameworks of what constitutes an academic misconduct. Accordingly, scholars might show an interest in investigating differences between the impact of integrity tutorials on components of academic dishonesty in different countries, thus shedding light on how cultural differences influence students' academic integrity culture in the aftermath of educational intervention.

6. Conclusions

As one of the main pillars of sustainable education, academic integrity plays a key role in fostering long-term societal progress, by ensuring the transfer of ethical values, credible knowledge, and salient skills. In that sense, academic dishonesty became one of the major factors of degeneration of higher education, calling for urgent and targeted educational actions aiming to restore reliability, honesty, and righteousness of the educational process. The present study aimed to contribute to highly debated issue of usefulness of online tutorials in preventing academic dishonesty and enhancing a culture of integrity. It is based on the assumption that students often cheat due to lack of knowledge about academic integrity rules, regulations, and breaches. The results revealed that the effectiveness of online tutorial for changing students' perception of unethical behavior will depend on the type of dishonest behavior examined. Namely, findings suggested that for certain forms of misconduct, such as cheating, fabrication/falsification, or aiding/abetting dishonesty, online educational intervention enhances students' awareness of the seriousness of such offenses. For other types of academic dishonesty, such as plagiarism, there were no differences in perceived seriousness of the misconduct between students who completed online tutorial and those who did not. This suggests that educational interventions might not suffice to change students' understanding of academic dishonesty and deter them from unethical behavior, as a number of additional factors (in addition to lack of understanding of what constitutes academic dishonesty) influence their academic conduct. Other factors, such as those described by Chankova [74], including lack of writing and language skills, consumerist approach to higher education, focus on diploma (grade) rather than knowledge, and resistance to adopting new digital learning tools, may also guide students' ethical choices, and educational intervention is unlikely to significantly influence them. Consequently, online tutorials should be used jointly with other tools for combatting academic dishonesty in order to respond to multiple forms of misconduct and multiple motivations for such behavior.

In order to verify how additional factors moderate obtained effects of the online tutorial on different forms of misconduct, we also analyzed whether receiving a certificate after the tutorial affected the relationship. Here, we also obtained somewhat disjointed results. We found that getting a certificate did not amplify students' attitudes towards certain dishonest behaviors such as cheating or fabrication/falsification. Yet, it did enhance students'

perceived seriousness of plagiarism and aiding and abetting dishonesty, demonstrating that certificates might be a useful tool for enhancing educational interventions and their impact on certain types of academic malpractices. These findings invite policy makers to re-think sustainable educational approaches aimed at reducing academic dishonesty and consider various forms of academic malpractice, different types of educational tools, and diverse attitudes towards unethical behavior as key components of each sustainable educational intervention in the field.

Supplementary Materials: Academic Integrity Questionnaire. The following supporting information can be downloaded at: <https://www.mdpi.com/article/10.3390/su14031756/s1>.

Author Contributions: Conceptualization, R.D. and J.J.; methodology, S.P. and J.J.; software, S.P.; validation, R.D., J.J. and M.B.; formal analysis, D.V. and M.B.; investigation, R.D.; resources, D.V. and R.D.; data curation, S.P.; writing—original draft preparation, R.D.; writing—review and editing, J.J., M.B. and D.V.; visualization, S.P.; supervision, S.P. and D.V.; project administration, S.P.; funding acquisition, R.D. All authors have read and agreed to the published version of the manuscript.

Funding: This manuscript has been produced in the framework of the national project entitled “Strengthening Academic Integrity—Interdisciplinary Research-based Approach to Ethical Behaviour in Higher Education”, which was financed by the Ministry of Science of Montenegro.

Institutional Review Board Statement: Ethical review and approval were waived for this study as the current national and institutional regulations do not define them. Yet, in order to ensure highest level of transparency and ethical standards, we asked for the official confirmation of the manuscript’s ethical compliance from the University of Montenegro, Center for Quality Assurance. Furthermore, while University does not have ethical protocols and regulations in terms of treating the organization’s name in research papers, the established practice is to allow researchers to disclose the institution’s name, as long as it does not jeopardize participants’ confidentiality. Disclosing the name of institution in the paper was a deliberate choice as it provides authenticity and transparency, enabling other investigators to replicate the study in the same or similar environment.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study. All students were informed of the purpose and content of the research, data collection and analysis, and exploitation of the results prior to the administration of the survey. The students voluntarily participated in the survey and data were collected and processed anonymously, with highest level of diligence and ethical standards. Researchers ensured to protect respondents’ confidentiality throughout the research process.

Data Availability Statement: The data presented in this study are available on request from the corresponding author.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Islam, N.; Beer, M.; Slack, F. E-Learning Challenges Faced by Academics in Higher Education: A Literature Review. *J. Educ. Train. Stud.* **2015**, *3*, 102–112. [[CrossRef](#)]
2. Levine, J.; Pazdernik, V. Evaluation of a four-prong anti-plagiarism program and the incidence of plagiarism: A five-year retrospective study. *Assess. Eval. High. Educ.* **2018**, *43*, 1094–1105. [[CrossRef](#)]
3. Amzalag, M.; Shapira, N.; Dolev, N. Two Sides of the Coin: Lack of Academic Integrity in Exams During the Corona Pandemic, Students’ and Lecturers’ Perceptions. *J. Acad. Ethics* **2021**. [[CrossRef](#)] [[PubMed](#)]
4. Chen, C.; Long, J.; Liu, J.; Wang, Z.; Wang, L.; Zhang, J. Online Academic Dishonesty of College Students: A Review. In Proceedings of the 2020 International Conference on Advanced Education, Management and Social Science (AEMSS2020), Hangzhou, China, 12–13 April 2020; pp. 156–161. [[CrossRef](#)]
5. McCabe, D.L. Cheating among college and university students: A North American perspective. *Int. J. Educ. Integr.* **2005**, *1*. [[CrossRef](#)]
6. Park, C. In Other (People’s) Words: Plagiarism by University Students—Literature and Lessons. *Assess. Eval. High. Educ.* **2003**, *28*, 471–488. [[CrossRef](#)]
7. Devlin, M.; Gray, K. In their own words: A qualitative study of the reasons Australian university students plagiarize. *High. Educ. Res. Dev.* **2007**, *26*, 181–198. [[CrossRef](#)]
8. Anohina-Naumeca, A.; Birzniece, I.; Odiņeca, T. Students’ awareness of the academic integrity policy at a Latvian university. *Int. J. Educ. Integr.* **2020**, *16*, 12. [[CrossRef](#)]

9. Macdonald, R.; Carroll, J. Plagiarism—A complex issue requiring a holistic institutional approach. *Assess. Eval. High. Educ.* **2006**, *31*, 233–245. [[CrossRef](#)]
10. Fatemi, G.; Saito, E. Unintentional plagiarism and academic integrity: The challenges and needs of postgraduate international students in Australia. *J. Furth. High. Educ.* **2019**, *44*, 1305–1319. [[CrossRef](#)]
11. Newton, P.M. How Common Is Commercial Contract Cheating in Higher Education and Is It Increasing? A Systematic Review. *Front. Educ.* **2018**, *3*, 1–18. [[CrossRef](#)]
12. Sefcik, L.; Striepe, M.; Yorke, J. Mapping the landscape of academic integrity education programs: What approaches are effective? *Assess. Eval. High. Educ.* **2020**, *45*, 30–43. [[CrossRef](#)]
13. Stoesz, B.M.; Yudinseva, A. Effectiveness of tutorials for promoting educational integrity: A synthesis paper. *Int. J. Educ. Integr.* **2018**, *14*, 6. [[CrossRef](#)]
14. Stoesz, B.M.; Los, R. Evaluation of a Tutorial Designed to Promote Academic Integrity. *Can. Persp. Acad. Integr.* **2019**, *2*, 3–26.
15. Smith, M.W.; Dupre, E.M.; Mackey, A.D. Deterring Research Paper Plagiarism with Technology: Establishing a Department-Level Electronic Research Paper Database with E-mail. *J. Crim. Justice Educ.* **2005**, *16*, 193–204. [[CrossRef](#)]
16. Risquez, A.; O'Dwyer, M.; Ledwith, A. Technology enhanced learning and plagiarism in entrepreneurship education. *Educ. Train.* **2011**, *53*, 750–761. [[CrossRef](#)]
17. Grebing, R.E. The Effect of an Online Academic Integrity Tutorial on Student Perceptions of Cheating. Ph.D. Dissertation, University of Missouri, Columbia, MO, USA, 2015.
18. Bingham, T.; Reid, S.; Ivanovic, V. Paint me a picture: Translating academic integrity policies and regulations into visual content for an online course. *Int. J. Educ. Integr.* **2016**, *12*, 1–13. [[CrossRef](#)]
19. Selvi, K. Motivating factors in online courses. *Procedia Soc. Behav. Sci.* **2010**, *2*, 819–824. [[CrossRef](#)]
20. Sims, R. Promises of Interactivity: Aligning Learner Perceptions and Expectations with Strategies for Flexible and Online Learning. *Distance Educ.* **2003**, *24*, 87–103. [[CrossRef](#)]
21. Borrás Gené, O.; Martínez-Nuñez, M.; Fidalgo-Blanco, A. New Challenges for the Motivation and Learning in Engineering Education Using Gamification in MOOC. *Int. J. Eng. Educ.* **2016**, *32*, 501–512.
22. Haug, S.; Wodzicki, K.; Cress, U.; Moskaliuk, J. Self-Regulated Learning in MOOCs: Do Open Badges and Certificates of Attendance Motivate Learners to Invest More? In Proceedings of the EMOOCs 2014—European MOOC Stakeholder Summit, Lausanne, Switzerland, 10–12 February 2014; Cress, U., Kloos, C.D., Eds.; Ecole Polytechnique Federale de Lausanne: Lausanne, Switzerland, 2014; pp. 66–72.
23. Benson, L.; Rodier, K.; Enström, R.; Bocatto, E. Developing a university-wide academic integrity E-learning tutorial: A Canadian case. *Int. J. Educ. Integr.* **2019**, *15*, 1–23. [[CrossRef](#)]
24. Doering, A.; Scharber, C.; Miller, C.; Veletsianos, G. GeoThentic: Designing and Assessing with Technological Pedagogical Content Knowledge. *CITE J.* **2009**, *9*, 316–336.
25. Pallarès, C.Q.; Martí, A.S.; Ciraso, A.; Pineda-Herrero, P. Online vs. Classroom Learning: Examining Motivational and Self-Regulated Learning Strategies Among Vocational Education and Training Students. *Front. Psychol.* **2019**, *10*, 2795. [[CrossRef](#)]
26. Price, L.; Richardson, J.T.E.; Jelfs, A. Face-to-face versus online tutoring support in distance education. *Stud. High. Educ.* **2007**, *32*, 1–20. [[CrossRef](#)]
27. Christensen, C.; Horn, B.M.; Johnson, W.C. *Disrupting Class: How Innovation Will Change the Way the World Learns*; McGraw-Hill: New York, NY, USA, 2008.
28. Mishra, L.; Gupta, T.; Shree, A. Online teaching-learning in higher education during lockdown period of COVID-19 pandemic. *Int. J. Educ. Res. Open* **2020**, *1*, 100012. [[CrossRef](#)] [[PubMed](#)]
29. Myers, D.G. *Social Psychology*; McGraw-Hill: New York, NY, USA, 2010.
30. Belter, R.W.; Du Pré, A. A Strategy to Reduce Plagiarism in an Undergraduate Course. *Teach. Psychol.* **2009**, *36*, 257–261. [[CrossRef](#)]
31. Dee, T.S.; Jacob, A.B. Rational ignorance in education. A field experiment in student plagiarism. *J. Hum. Resour.* **2011**, *47*, 397–434.
32. Obeid, R.; Hill, D.B. An Intervention Designed to Reduce Plagiarism in a Research Methods Classroom. *Teach. Psychol.* **2017**, *44*, 155–159. [[CrossRef](#)]
33. Curtis, G.J.; Gouldthorp, B.; Thomas, F.E.; O'Brien, M.G.; Correia, M.H. Online academic-integrity mastery training may improve students' awareness of, and attitudes toward, plagiarism. *Psychol. Learn. Teach.* **2013**, *12*, 282–289. [[CrossRef](#)]
34. Lowe, M.S.; Londino-Smolar, G.; Wendeln, K.E.A.; Sturek, D.L. Promoting academic integrity through a stand-alone course in the learning management system. *Int. J. Educ. Integr.* **2018**, *14*, 13. [[CrossRef](#)]
35. Ellery, K. Undergraduate plagiarism: A pedagogical perspective. *Assess. Eval. High. Educ.* **2008**, *33*, 507–516. [[CrossRef](#)]
36. Lothringer, L.B. Evaluation of the Use of an Academic Integrity Training Course as a Proactive Measure Encouraging Academic Honesty. Ph.D. Dissertation, Iowa State University, Ames, IA, USA, 2018. [[CrossRef](#)]
37. Stephens, J.M.; Watson, P.W.S.J.; Alansari, M.; Lee, G.; Turnbull, S.M. Can Online Academic Integrity Instruction Affect University Students' Perceptions of and Engagement in Academic Dishonesty? Results From a Natural Experiment in New Zealand. *Front. Psychol.* **2021**, *12*, 569133. [[CrossRef](#)] [[PubMed](#)]
38. Brown, B.S.; McInerney, M. Changes in Academic Dishonesty among Business Students in the United States, 1999–2006. *Int. J. Inf. Manage.* **2008**, *25*, 621–632.
39. Germek, G. The Lack of Assessment in the Academic Library Plagiarism Prevention Tutorial. *Coll. Undergrad. Libr.* **2012**, *19*, 1–17. [[CrossRef](#)]

40. Dubey, S.; Pirooska, B.; Gautam, M. Exploration of Factors Affecting Learners' Motivation in E-learning. *Int. J. Sci. Res. Comput. Sci. Eng. Inf. Technol.* **2019**, 1269–1275. [[CrossRef](#)]
41. Kizilcec, R.F.; Schneider, E. Motivation as a Lens to Understand Online Learners: Toward Data-Driven Design with the OLEI Scale. *ACM Trans. Comput. Hum. Interact.* **2015**, 22, 1–24. [[CrossRef](#)]
42. Milligan, C.; Littlejohn, A. Why Study on a MOOC? The Motives of Students and Professionals. *Int. Rev. Res. Open Distrib. Learn.* **2017**, 18, 92–102. [[CrossRef](#)]
43. Alleyne, P.; Phillips, K. Exploring Academic Dishonesty among University Students in Barbados: An Extension to the Theory of Planned Behaviour. *J. Acad. Ethics* **2011**, 9, 323–338. [[CrossRef](#)]
44. Aaron, L.S.; Roche, C.M. Stemming the Tide of Academic Dishonesty in Higher Education: It Takes a Village. *J. Educ. Technol. Syst.* **2013**, 42, 161–196. [[CrossRef](#)]
45. Hair, J.F.; Black, W.C.; Balin, B.J.; Anderson, R.E. *Multivariate Data Analysis*; Maxwell Macmillan International Editions: New York, NY, USA, 2010.
46. Churchill, G.A., Jr. A Paradigm for Developing Better Measures of Marketing Constructs. *J. Mark. Res.* **1979**, 16, 64–73. [[CrossRef](#)]
47. Pekovic, S.; Vukcevic, J.; Vuckovic, D.; Djokovic, R.; Blecic, M. What drives students' intention to plagiarise in Montenegro: The moderating role of text matching software. In *Integrity in Education for Future Happiness, Proceedings of the 6th International Conference on Plagiarism Across Europe and Beyond, Dubai, UAE, 17–19 April, 2020*; Khan, Z.R., Hill, C., Foltynnek, C., Eds.; Mendel University in Brno: Brno, Czech Republic, 2020; pp. 127–154.
48. Christensen, J.M. The Attitudes and Behaviors of Generational Students towards Academic Integrity at the Community College. Ph.D. Dissertation, Old Dominion University, Norfolk, VA, USA, 2011.
49. Schindler, G.D. Examining the Relationship Between Academic Integrity and Moral Reasoning Among Physical Therapy Students. Ph.D. Dissertation, The University of North Dakota, Grand Forks, ND, USA, 2016.
50. Wooldridge, J.M. *Econometric Analysis of Cross Section and Panel Data*; MIT Press: Cambridge, MA, USA, 2002.
51. Heckman, J.J.; Ichimura, H.; Todd, P.E. Matching as An Econometric Evaluation Estimator: Evidence from Evaluating a Job Training Programme. *Rev. Econ. Stud.* **1997**, 64, 605–654. [[CrossRef](#)]
52. Gallant, T.B.; Drinan, P. Toward a Model of Academic Integrity Institutionalization: Informing Practice in Postsecondary Education. *Can. J. High. Educ.* **1969**, 38, 24–43. [[CrossRef](#)]
53. Orr, J. Developing a Campus Academic Integrity Education Seminar. *J. Acad. Ethics* **2018**, 16, 195–209. [[CrossRef](#)]
54. Ballard, I.B. The Impact of an Academic Integrity Module and Turnitin® on Similarity Index Scores of Undergraduate Student Papers. *Res. Sch.* **2013**, 20, 1–13.
55. Schuetze, P. Evaluation of a Brief Homework Assignment Designed to Reduce Citation Problems. *Teach. Psychol.* **2004**, 31, 257–259. [[CrossRef](#)]
56. Jackson, P.A. Plagiarism Instruction Online: Assessing Undergraduate Students' Ability to Avoid Plagiarism. *Coll. Res. Libr.* **2006**, 67, 418–428. [[CrossRef](#)]
57. Halak, B.; El-Hajjar, M. Design and evaluation of plagiarism prevention and detection techniques in engineering education. *High. Educ. Pedagog.* **2019**, 4, 197–208. [[CrossRef](#)]
58. Perkins, M.; Gezgin, U.B.; Roe, J. Reducing plagiarism through academic misconduct education. *Int. J. Educ. Integr.* **2020**, 16, 1–15. [[CrossRef](#)]
59. Bareket-Bojmel, L.; Hochman, G.; Ariely, D. It's (Not) All About the Jacks: Testing Different Types of Short-Term Bonuses in the Field. *J. Manage.* **2014**, 20, 1–21. [[CrossRef](#)]
60. Harackiewicz, J.M. The effects of reward contingency and performance feedback on intrinsic motivation. *J. Pers. Soc. Psychol.* **1979**, 37, 1352–1363. [[CrossRef](#)]
61. Cook, B.R.; Babon, A. Active learning through online quizzes: Better learning and less (busy) work. *J. Geogr. High. Educ.* **2016**, 41, 24–38. [[CrossRef](#)]
62. Hughes, J.M.C.; McCabe, D.L. Understanding Academic Misconduct. *Can. J. High. Educ.* **2006**, 36, 49–63. [[CrossRef](#)]
63. Kier, C.A. Plagiarism Intervention Using a Game-Based Tutorial in an Online Distance Education Course. *J. Acad. Ethics* **2019**, 17, 429–439. [[CrossRef](#)]
64. McCabe, D.L.; Treviño, L.K.; Butterfield, K.D. Honor Codes and Other Contextual Influences on Academic Integrity: A Replication and Extension to Modified Honor Code Settings. *Res. High. Educ.* **2002**, 43, 357–378. [[CrossRef](#)]
65. Witmer, H.; Johansson, J. Disciplinary action for academic dishonesty: Does the student's gender matter? *Int. J. Educ. Integr.* **2015**, 11, 1–10. [[CrossRef](#)]
66. Bjelobaba, S. Academic Integrity Teacher Training: Preventive Pedagogical Practices on the Course Level. In *Integrity in Education for Future Happiness*; Khan, Z.R., Hill, C., Foltynnek, C., Eds.; Mendel University in Brno: Brno, Czech Republic, 2020; pp. 9–18.
67. Sorea, D.; Repanovici, A. Project-based learning and its contribution to avoid plagiarism of university students. *Investig. Bibl.* **2020**, 34, 155. [[CrossRef](#)]
68. Wong, E.Y.W.; Kwong, T.; Pegrum, M. Learning on mobile augmented reality trails of integrity and ethics. *Res. Pr. Technol. Enhanc. Learn.* **2018**, 13, 1–20. [[CrossRef](#)]
69. Khan, Z.R.; Dyer, J.; Bjelobaba, S.; Gomes, S.F.; Dlabolová, D.H.; Sivasubramaniam, S.; Biju, S.M.; Hysaj, A.; Harish, P. Initiating count down—Gamification of academic integrity. *Int. J. Educ. Integr.* **2021**, 17, 1–15. [[CrossRef](#)]

70. Dendir, S.; Maxwell, R.S. Cheating in online courses: Evidence from online proctoring. *Comput. Hum. Behav. Rep.* **2020**, *2*, 100033. [[CrossRef](#)]
71. Alessio, H.M.; Malay, N.J.; Maurer, K.; Bailer, A.J.; Rubin, B. Examining the Effect of Proctoring on Online Test Scores. *Online Learn.* **2017**, *21*, 146–161. [[CrossRef](#)]
72. González-González, C.S.; Infante-Moro, A.; Moro, J.C.I. Implementation of E-Proctoring in Online Teaching: A Study about Motivational Factors. *Sustainability* **2020**, *12*, 3488. [[CrossRef](#)]
73. Yukhymenko-Lescroart, M.A. Ethical Beliefs Toward Academic Dishonesty: A Cross-Cultural Comparison of Undergraduate Students in Ukraine and the United States. *J. Acad. Ethics* **2014**, *12*, 29–41. [[CrossRef](#)]
74. Chankova, M. Teaching Academic Integrity: The Missing Link. *J. Acad. Ethics* **2020**, *18*, 155–173. [[CrossRef](#)]